



1
SEQUENCE LISTING

#9

<110> EVANS, RONALD M.

<120> Novel steroid-activated nuclear receptors and uses therefor

<130> SALK2270-5

<140> 10/081,555

<141> 2002-02-20

<150> 09/458,366

<151> 1999-12-09

<160> 09/227,718

<161> 1999-01-08

<170> 09/005,286

<171> 1998-01-09

<180> 43

<190> PatentIn Ver. 2.1

<210> 1

<211> 2068

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (583)..(1884)

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<221> modified_base

<222> (1263)

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cagactgatg aaatgcgctc agaattactt agacaaagcg gatatttgcc actctcttcc 120

ccttttctg tgtttttgta gtgaagagac ctgaaagaaa aaagtaggga gaacataatg 180

agaacaaata cggtaatctc ttcatttgct agttcaagtg ctggacttgg gacttaggag 240

gggcaatgga gccgcttagt gctacatct gacttggact gaaatatagg tgagagacaa 300

gattgtctca tatccgggga aatcataacc tatgactagg acgggaagag gaagcactgc 360

ctttacttca gtgggaatct cggcctcagc ctgcaagcca agtggttcaca gtgagaaaag 420

caagagaata agctaatact cctgtcctga acaaggcagc ggctccttgg taaagctact 480

ccttgatcga tcctttgcac cggattgttc aaagtggacc ccaggggaga agtcggagca 540

aagaacttac caccaagcag toccaagaggc ccagaagcaa ac ctg gag gtg aga 594
Leu Glu Val Arg

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ccc aaa gaa agc tgg aac cat gct gac ttt gta cac tgt gag gac aca	642
Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His Cys Glu Asp Thr	
5 10 15 20	
gag tct gtt cct gga aag ccc agt gtc aac gca gat gag gaa gtc gga	690
Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp Glu Glu Val Gly	
25 30 35	
ggg ccc caa atc tgc cgt gta tgt ggg gac aag gcc act ggc tat cac	738
Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala Thr Gly Tyr His	
40 45 50	
ttc aat gtc atg aca tgt gaa gga tgc aag ggc ttt ttc agg agg gcc	786
Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ala	
55 60 65	
atg aaa cgc aac gcc cgg ctg agg tgc ccc ttc cgg aag ggc gcc tgc	834
Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg Lys Gly Ala Cys	
70 75 80	
gag atc acc cgg aag acc cgg cga cag tgc cag gcc tgc cgc ctg cgc	882
Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala Cys Arg Leu Arg	
85 90 95 100	
aag tgc ctg gag agc ggc atg aag aag gag atg atc atg tcc gac gag	930
Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile Met Ser Asp Glu	
105 110 115	
gcc gtg gag gag agg cgg gcc ttg atc aag cgg aag aaa agt gaa cgg	978
Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys Lys Ser Glu Arg	
120 125 130	
aca ggg act cag cca ctg gga gtg cag ggg ctg aca gag gag cag cgg	1026
Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr Glu Glu Gln Arg	
135 140 145	
atg atg atc agg gag ctg atg gac gct cag atg aaa acc ttt gac act	1074
Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys Thr Phe Asp Thr	
150 155 160	
acc ttc tcc cat ttc aag aat ttc cgg ctg cca ggg gtg ctt agc agt	1122
Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly Val Leu Ser Ser	
165 170 175 180	
ggc tgc gag ttg cca gag cct ctg cag gcc cca tcg agg gaa gaa gct	1170
Gly Cys Glu Leu Pro Glu Pro Leu Gln Ala Pro Ser Arg Glu Glu Ala	
185 190 195	
gcc aag tgg agc cag gtc cgg aaa gat ctg tgc tct ttg aag gtc tct	1218
Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser Leu Lys Val Ser	
200 205 210	
ctg caa gct gcg ggg gga gga tgg cag tgt ctg gaa cta caa acn ccc	1266
Leu Gln Ala Ala Gly Gly Gly Trp Gln Cys Leu Glu Leu Gln Xaa Pro	
215 220 225	
agc cga cag tgg cgg aaa gag atc ttc tcc ctg ctg ccc cac atg gct	1314
Ser Arg Gln Trp Arg Lys Glu Ile Phe Ser Leu Leu Pro His Met Ala	
230 235 240	

2

22

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9

<210> 2
 <211> 434
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> (227)
 <223> Threonine

<400> 2

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 1 5 10 15

Cys Glu Asp Thr Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp
 20 25 30

Glu Glu Val Gly Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala
 35 40 45

Thr Gly Tyr His Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe
 50 55 60

Phe Arg Arg Ala Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg
 65 70 75 80

Lys Gly Ala Cys Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala
 85 90 95

Cys Arg Leu Arg Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile
 100 105 110

Met Ser Asp Glu Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys
 115 120 125

Lys Ser Glu Arg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr
 130 135 140

Glu Glu Gln Arg Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys
 145 150 155 160

Thr Phe Asp Thr Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly
 165 170 175

Val Leu Ser Ser Gly Cys Glu Leu Pro Glu Pro Leu Gln Ala Pro Ser
 180 185 190

Arg Glu Glu Ala Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser
 195 200 205

Leu Lys Val Ser Leu Gln Ala Ala Gly Gly Gly Trp Gln Cys Leu Glu
 210 215 220

Leu Gln Xaa Pro Ser Arg Gln Trp Arg Lys Glu Ile Phe Ser Leu Leu
 225 230 235 240

Pro His Met Ala Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser
 245 250 255

Phe Ala Lys Val Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln
 260 265 270

Ile Ser Leu Leu Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe
 275 280 285

Asn Thr Val Phe Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu
 290 295 300

Ser Tyr Cys Leu Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu
 305 310 315 320

Glu Pro Met Leu Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His
 325 330 335

Glu Glu Glu Tyr Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp
 340 345 350

Arg Pro Gly Val Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln
 355 360 365

Phe Ala Ile Thr Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro
 370 375 380

Ala His Arg Phe Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu
 385 390 395 400

Arg Ser Ile Asn Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp
 405 410 415

Ile His Pro Phe Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr
 420 425 430

Gly Ser

<210> 3

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP3A1

<400> 3

tagacagttc atgaagttca tctac

25

<210> 4

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP3A2

<400> 4
 taagcagttc ataaagttca tctac 25

<210> 5
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rUGT1A6

<400> 5
 actgtagttc ataaagttca catgg 25

<210> 6
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rbCYP2C1

<400> 6
 caatcagttc aacagggttc accaat 26

<210> 7
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rP450R

<400> 7
 cacaggtgag ctgaggccag cagcaggtcg aaa 33

<210> 8
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP2A1

<400> 8
 gtgcaggttc aactggaggt caacatg 27

<210> 9
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP2A2

<400> 9
 gtgctggttc aactggaggt cagtatg

27

<210> 10
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP2C6

<400> 10
 agtctagttc agtgggggtt cagtctt

27

<210> 11
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 hCYP2E1

<400> 11
 gagatggttc aaggaagggt cattaac

27

<210> 12
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 0 nucleotides

<400> 12
 catagtcagg tcaaggtcag atcaac

26

<210> 13
 <211> 27

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 1 nucleotides

<400> 13
catagtcagg tcataggtca gatcaac 27

<210> 14
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 2 nucleotides

<400> 14
catagtcagg tcaataggtc agatcaac 28

<210> 15
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 3 nucleotides

<400> 15
catagtcagg tcatataggt cagatcaac 29

<210> 16
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 4 nucleotides

<400> 16
catagtcagg tcatataagg tcagatcaac 30

<210> 17
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 5 nucleotides

<400> 17
catagtcagg tcatatatag gtcagatcaa c 31

<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 6 nucleotides

<400> 18
catagtcagg tcatatataa ggtcaagatc aac 33

<210> 19
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 7 nucleotides

<400> 19
catagtcagg tcatatatat aggtcagatc aac 33

<210> 20
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 10 nucleotides

<400> 20
catagtcagg tcatatatat ataaggtcag atcaac 36

<210> 21
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 15 nucleotides

<400> 21
catagtcagg tcatagtagt agtagtagag gtcagatcaa c 41

<210> 22
<211> 17
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Example of a response element suitable for practice of the invention method

<220>

<221> modified_base

<222> (7)..(11)

<223> This region may encompass 5, 4 or 3 nucleotides, independently selected from a, c, t or g

<400> 22

agttcannnn ntgaact

17

<210> 23

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Example of a response element suitable for practice of the invention method

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<221> modified_base

<222> (7)..(12)

<223> a, c, t or g

<400> 23

tgaactnnnn nnaggtca

18

<210> 24

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 24

tgaactcaaa ggaggtca

18

<210> 25

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 0 nucleotides

<400> 25
agcttaggtc atgaccta

18

<210> 26
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 1
nucleotides

<400> 26
agcttaggtc agtgaccta

19

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 2
nucleotides

<400> 27
agcttaggtc acgtgaccta

20

<210> 28
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 3
nucleotides

<400> 28
agcttaggtc acagtgcct a

21

<210> 29
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 4
nucleotides

<400> 29
agcttaggtc acatgtgacc ta

22

<210> 30
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 5
 nucleotides

<400> 30
 agcttaggtc acactgtgac cta

23

<210> 31
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Inverted
 repeat response element with spacer of 6
 nucleotides

<400> 31
 agctttgaac tcaaaggagg tca

23

<210> 32
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: IR-M

<400> 32
 agcttacgtc atgacgta

18

<210> 33
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 33
 tagaatatga actcaaagga ggtcagtgag tgg

33

<210> 34
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 34
 tagaatatga actcaaagga ggtaagcaaa ggg

33

<210> 35
<211> 32
<212> DNA
<213> Homo sapiens

<400> 35
tagaatatta actcaatgga ggcagtgagt gg

32

<210> 36
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 36
gagcaattcg ccattactct gaagt

25

<210> 37
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 37
gtccttgggg tcttctacct ttctc

25

<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 38
gacgatttgg atctggacat gttgg

25

<210> 39
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 39
tgaacttcac gaact

15

<210> 40
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 40
gttttcatct gagcgtccat cagct

25

<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative
peptide

<400> 41
Arg Gly Lys Thr Cys Ala
1 5

<210> 42
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 42
tggtcttcat gttct

15

<210> 43
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43
acaacttcat gaact

15